A COMPARISON AND CRITICAL EVALUATION OF THE TEXAS ESSENTIAL KNOWLEDGE AND SKILLS AND THE COMMON CORE STATE STANDARDS FOR PRIMARY GRADES

An Undergraduate Research Scholars Thesis

by

KATHERINE M. STANDEFER

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Research Advisor: Dr. Miranda Walichowski

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ABSTRACT

A Comparison and Critical Evaluation of the Texas Essential Knowledge and Skills and the Common Core State Standards for Primary Grades. (May 2015)

Katherine M. Standefer
Department of Educational Psychology
Texas A&M University

Research Advisor: Dr. Miranda Walichowski
Department of Educational Psychology

The study investigates the differences and similarities between the Common Core State Standards (CCSS) and the Texas Essential Knowledge and Skills (TEKS). Further, its goal is to evaluate each standard within both TEKS and CCSS based on four descriptors: vertical alignment, clarity, rigor, and content value. The selected method of analysis in this study will be a side-by-side comparison of the CCSS to the TEKS. Kindergarten, third, and fifth grade English-Language Arts (ELA) standards will be analyzed. After identifying similarities and differences using a Concept Matching Map developed for this study, an evaluation of the quality of both standards sets will be performed. The evaluation will address vertical alignment, clarity, rigor, and content value by assigning each standard a score for each of the aforementioned categories based on a rubric created for this purpose. There are two predicted research outcomes regarding quality: this study will expose poor quality in the learning expectations designed by the Common Core, or, evidence will show that the Common Core is an improvement upon the TEKS and educators should call for a revision of the Texas standards in order to best serve our students. Evidence will also show how different the two standards sets really are, if at all.

DEDICATION

To Eileen Divita: teacher, principal, and grandmother.

ACKNOWLEDGEMENTS

I would like to thank Dr. Miranda Walichowski for her support of this research, my undergraduate career at Texas A&M University, and my personal and career development.

NOMENCLATURE

TEKS	Texas Essential Knowledge and Skills
CCSS	Common Core State Standards
CCSSELA	Common Core State Standards for English Language Arts
SE	Student Expectations
ELA	English Language Arts
EM	Exact Match
PM	Partial Match
Q Score	Quality Score

CHAPTER I

INTRODUCTION

The National Governors Association Center (NGA) for Best Practices and Council of Chief State School Officers (CCSSO) (2010) have recently unveiled a new initiative called the Common Core State Standards: a set of educational standards intended to homogenize American educational outcomes that has been adopted in forty-three states, the District of Columbia, four territories, and the Department of Defense Education Activity. Although the Common Core has been rejected in Texas, this large-scale overhaul of American educational standards is a relevant topic for all educators because of its formative influence on the next generation of American students, its influence on the development of college entrance examinations to which even non-Common Core students will be subjected, and its impact on the development and production of textbooks. Critics have raised questions regarding the quality and appropriateness of these new standards. The goal of this study is to investigate these claims in a systematic fashion by analyzing the degree to which the standards differ and evaluating the quality of the standards. In order to protect the integrity of education in Texas and the United States, it is essential that new movements such as the Common Core be critically analyzed by educators. The results of this study will indicate necessary further action. If the Common Core lacks in alignment, clarity, rigor, and content value, revisions of the standards should be considered by state officials. If it is found to be an improvement upon Texas's current standards (TEKS), Texas educational leaders and legislators should take it as a call to reform our state standards in order to best serve students and to maintain a competitive edge nationally.

CHAPTER II

METHODS

Concept Matching Map

In order to examine how similar the TEKS (Texas Education Agency, 2010) and CCSS (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010) are in content, the researcher developed a Concept Matching Map (Figure 1). The TEKS and the Common Core English Language Arts Standards (CCSSELA) are contained in a single document with three sheets: K, 3, and 5. Each sheet contains all the TEKS and CCSSELA for the corresponding grade level. As shown in Figure 1, the TEKS (red) are stacked vertically along the left margin, while the CCSSELA (blue) are positioned horizontally along the top, one beside another.

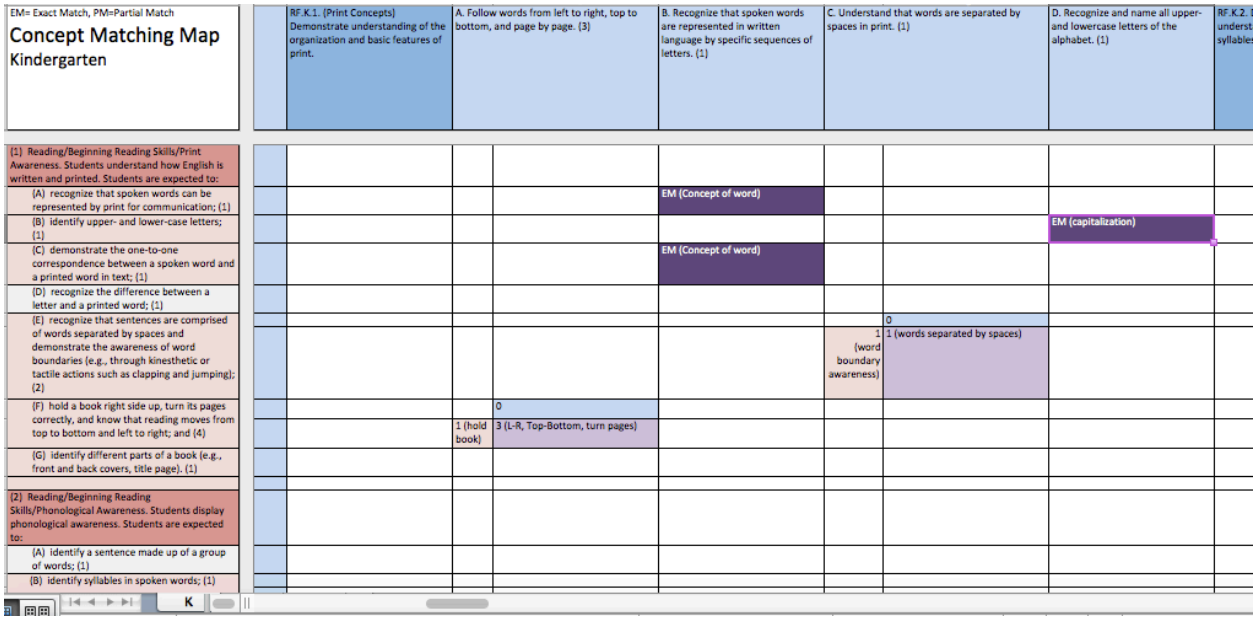

Figure 1. Above is the Concept Matching Map for Kindergarten. TEKS are on the left and CCSSELA along the top. The area where they intersect is the array; it contains data regarding the concept matches.

Each individual standard is contained in a single cell. The empty cells between the TEKS and CCSSELA form an array in which the comparison is situated. When a cell from the TEKS and a cell from the CCSSELA contain standards that are similar in content, it is a content match (Figure 2). The cell where their row and column meet will contain data about the match.

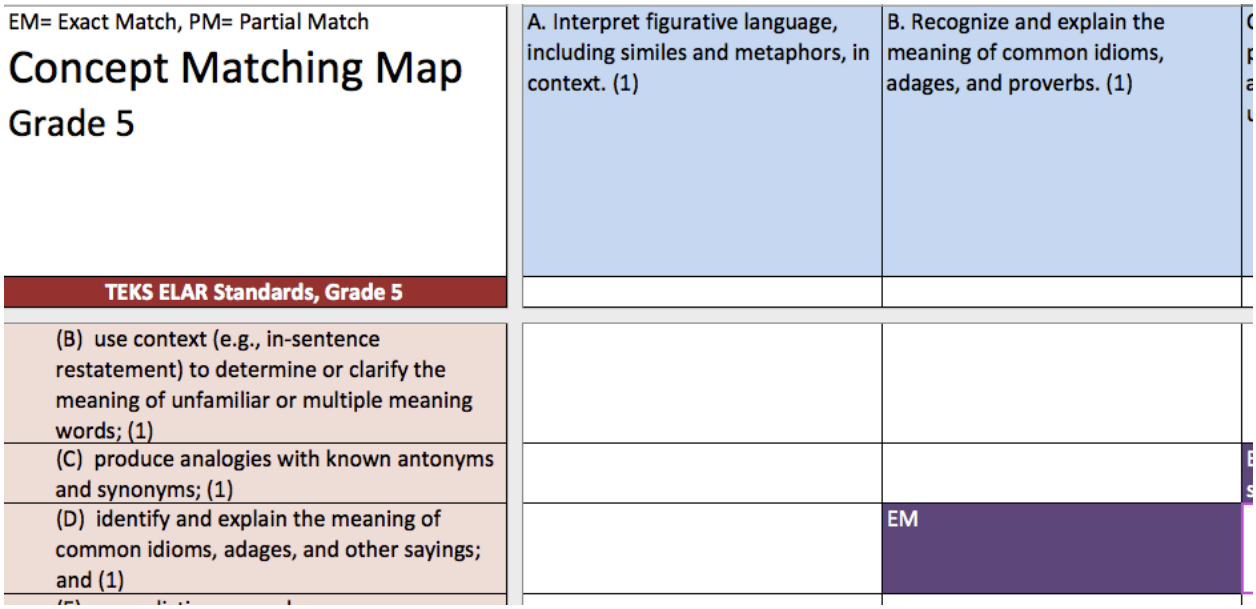

Figure 2. Above is a segment from the Concept Matching Map that shows a content match between L.5.5.B of the CCSSELA and 5.2D of the TEKS. The cell where L.5.5.B. and 5.2D intersect contains data about the match.

Matches are classified as either an exact match (EM) or partial match (PM). Matches are determined by the number of concepts shared. Each standard has a number within its cell after the standard's content representing the number of concepts addressed in said standard. If two standards share 100% of their concepts, it is an EM (Figure 3).

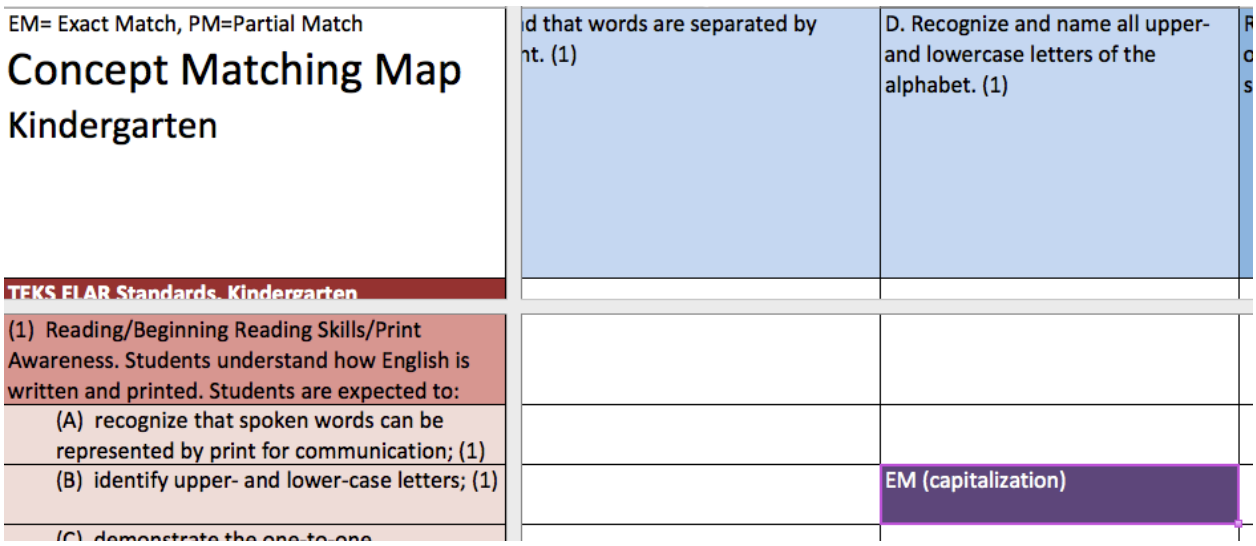

Figure 3. Above is a segment from the Concept Matching Map that shows an exact match between RF.K.1.D of the CCSSELA and K.1B of the TEKS. Note that both K.1B and RF.K.1.D. have one concept (identifying capital and lowercase letters), shown by a number one in parentheses (1). Because they have 100% of their concepts in common, it is an exact match.

If some, but not all, concepts are shared, it is a partial match (PM) (Figure 4). Cells within the array that contain PM data are divided into three parts: number of shared concepts (purple), number of concepts addressed in CCSSELA only (blue), and number of concepts addressed in TEKS only (red). The shared concepts go in the middle, flanked by the number of concepts addressed in CCSSELA only on top of the shared concepts cell and the number of concepts addressed in TEKS only on the left. In order to avoid inflating the results with redundant data, categorical standards were not analyzed for matches if they contained subcategories; except in several rare cases where the data was not redundant, only the subcategories were analyzed for matches. The TEKS refer to any standard that is a subcategory as a student expectation (SE). In this study, all "lettered" subcategories in the TEKS and CCSSELA will be referred to as SE's. For example: TEKS K.1, "Students understand how English is written and printed. Students are expected to," is the categorical standard. K.1B, "identify upper- and lower-case letters," is the SE.

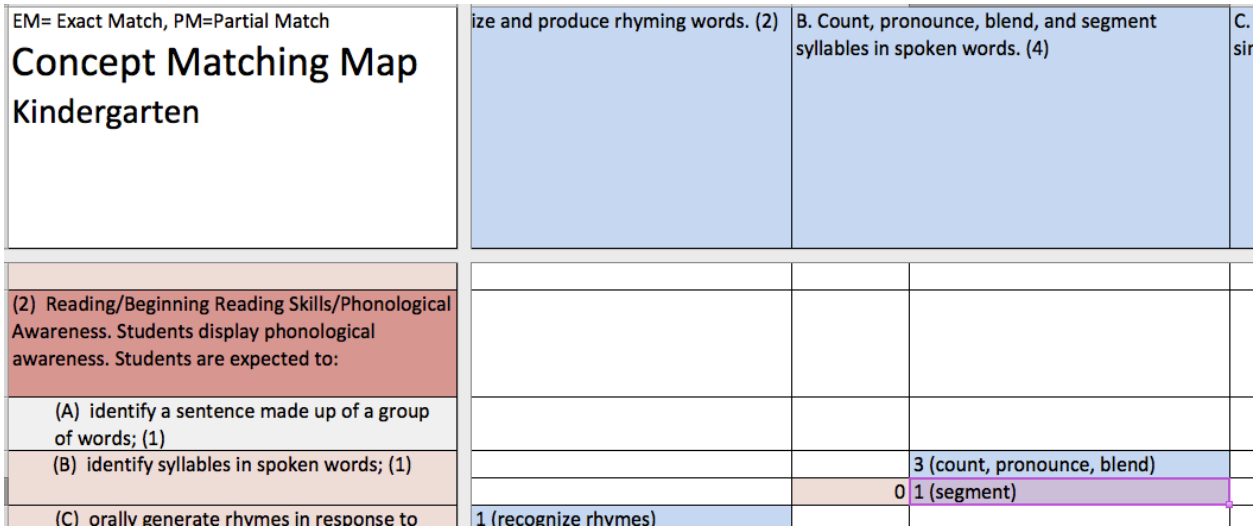

Figure 4. The figure shows an example of a partial match between RF.K.2.B and K.2B. They share one common concept (segmenting) and RF.K.2.C has three concepts that are unique to it (counting, pronouncing, and blending syllables). TEKS has no unique concepts in this standard, denoted by a 0. Note that K.2 is a categorical TEKS standard, has no concept number, and is not matched with any standard.

It is possible that two concepts in one set may overlap with a single concept in the other set. In this case, the pair form an EM, and the match can be denoted as shown in Figure 5.

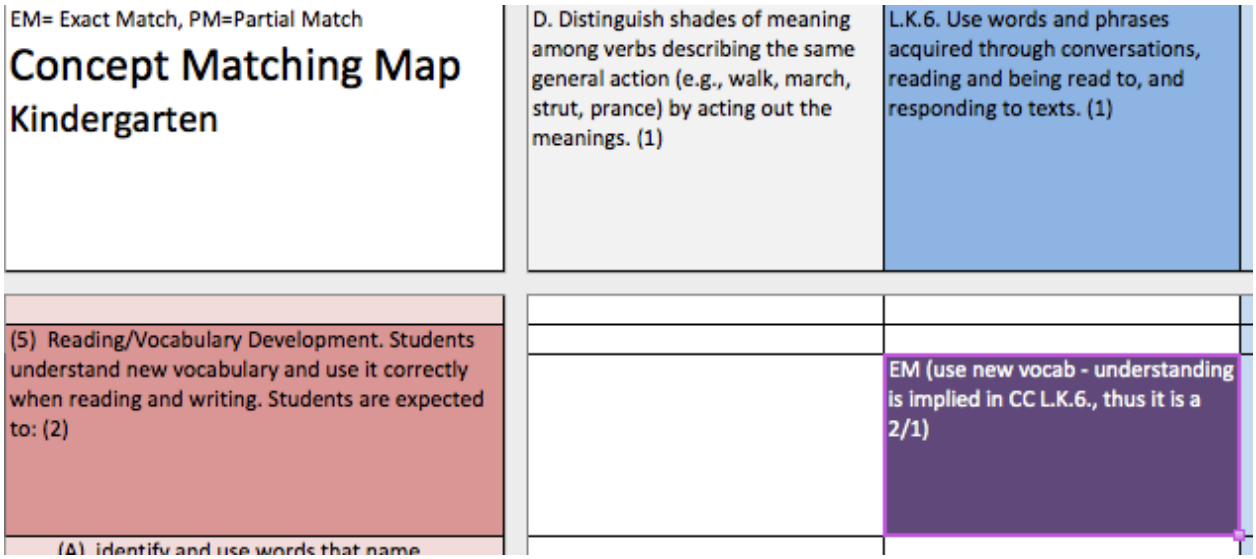

Figure 5. The figure shows a match where 2 concepts coincide with a single concept. The overlap is denoted by 2/1.

Color-Coding of Concept Matching Map

A system of color-coding was created to increase efficiency and clarity of document usage (Figure 6). TEKS standards are coded in shades of red, with the broadest standards in darker shades and the SE's in lighter reds. Likewise, the CCSSELA are in shades of blue with darker tones for more general categories and lighter tones for SE's. Any standard cell that has no matches in the entire map is gray. Matches within the array are colored in purple: dark purple for EM and light purple for PM. Cells showing the number of concepts addressed in CCSSELA only (within array) are light blue. Cells showing the number of concepts addressed in TEKS only (within array) are light red. Cells containing placeholder standards in the CCSSELA that are not applicable to the content or grade level, such as "(Not applicable to literature)" (RL.K.8.) and "(Begins in grade 3)" (W.K.4.) are left white.

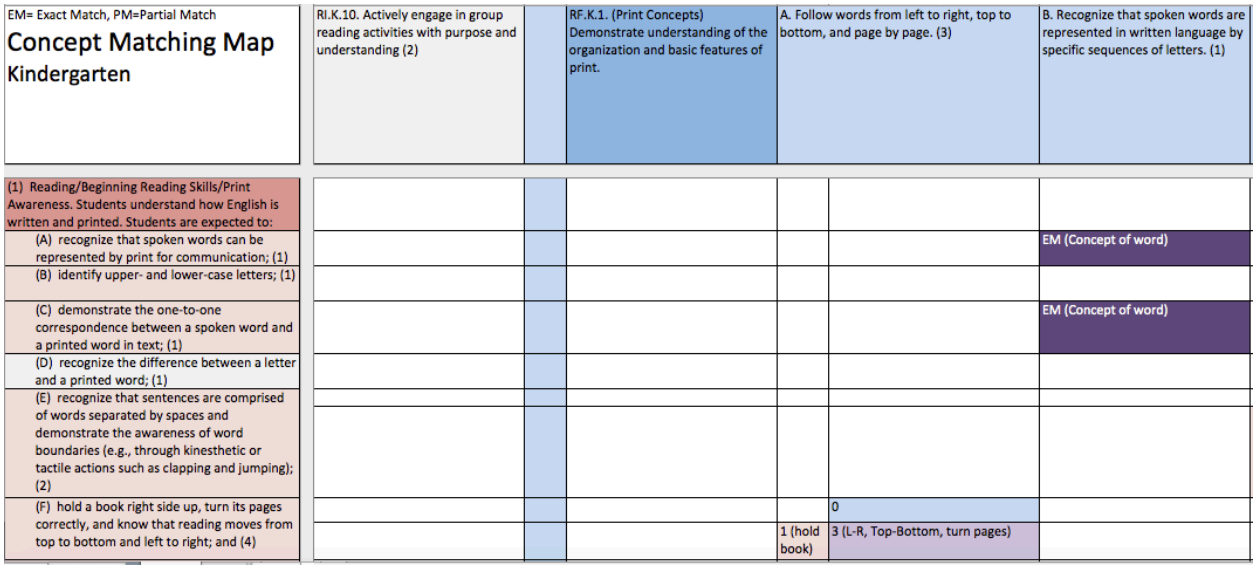

Figure 6. The segment demonstrates a dark red categorical TEKS standard (K.1), light red SE (K.1A), gray standard with no match (K.1D and RI.K.10.), dark blue CCSSELA categorical standard (RF.K.1.), light blue SE (RF.K.1.A.), dark purple EM, light purple PM, and blue and red TEKS and CCSSELA unique concepts.

Quality Evaluation Rubric

A rubric was used to evaluate the quality of each of the standards sets individually. The rubric has four descriptors that each standard can be rated on: vertical alignment, clarity, rigor, and value. The rubric (Figure 7) is a three point system; a standard can receive up to three points for each of the four categories, giving a perfect score of twelve. No standard can receive a zero on any of the four categories.

Quality	1	2	3
1. Vertical Alignment	**Not covered in previous grade level**	**Foundations laid in previous grade level, but different concept addressed** (repeated addition ➔ multiplication)	**Direct progression from previous grade level** (same language, same concept addressed) (ex: 1 digit multiplication ➔ 2 digit multiplication)
2. Clarity	**Expectations unclear;** teachers may have significantly different approaches due to vagueness of the standard leading to divergent learning outcomes.	**Expectations can be broadly interpreted;** vagueness can potentially lead to misinterpretations or variations that affect the learning outcome.	**Expectations are clear and specific;** little room for misinterpretation.
3. Rigor	**Knowledge/Comprehension**	**Application/Analysis**	**Synthesis/Evaluation**
4. Value	**Literacy Skill** (Gathering Information): • Information Literacy (access, manage, use information) • Media Literacy • Technology Literacy	**Learning Skill** (Thinking): • Critical Thinking/Problem Solving • Creativity/Innovation • Collaborating • Communicating (listening, oral, written, and nonverbal to inform, instruct, motivate and persuade)	**Life Skill** (Soft Skills): • Flexibility/Initiative • Social Skills (understand/ work effectively with diverse groups, situational appropriateness/language register) • Productivity (stamina, project management, study skills, following directions, stay on task) • Leadership • Self directed activities (improving focus, self-evaluation/self-regulation) • Presenting/Publishing • Development of Personal Identity (introspection, write own name, form opinions, connect to reality) • Interpreting body language, hidden, or biased messages

Figure 7. Above is the Quality Rubric used in the evaluation of the TEKS and CCSSELA. Categories which standards are rated on are on the left and scores of 1-3 are along the top.

The sum of the scores a single standard receives on each of the four categories is called the quality score (Q score). Each set of standards has is laid out (one its own sheet) vertically beside

four columns: one for each rating category. Each document has a sheet for grades K, 3, and 5. The spreadsheet (Figure 8) gives the individual scores for each category, the Q scores, the average scores for each category, and the average Q score. Each standard is colored according to whether it has an EM, PM, or no match in the Concept Matching Map. Categorical standards that were not analyzed in the Concept Matching Map were neither scored for quality in order to preserve the integrity of the data.

Evaluation of CCSS	Quality				
CCSSELA, Grade 3	Alignment	Clarity	Rigor	Value	Q Score
A. Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., take steps). (1)	1	3	2	2	8
B. Identify real-life connections between words and their use (e.g., describe people who are friendly or helpful). (1) (aligned to L.2.5.A.)	3	3	2	3	11
C. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, wondered). (1) (aligned to L.2.5.B.)	2	3	2	2	9
L.3.6. Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them). (1) (aligned to L.2.6.)	3	3	2	1	9
AVERAGES	2.61	2.96	2.04	1.80	9.41

Figure 8. The figure shows a segment of the Quality Evaluation scoring sheet for the 3rd grade CCSSELA. Note that standard L.3.6. has a Q Score of 9, which is the sum of its scores for alignment (3), clarity (3), rigor (2), and value (1). The average Q Score of the 3rd grade standards is 9.41, seen at bottom right hand corner.

Development Process

It is essential that students have opportunities to learn useful content that presents an adequate challenge. Standards that are clear, cohesive, relevant, and have high expectations will afford students with the best learning opportunities. Both the comparison and evaluation processes of

these standards were designed to determine whether the standards would contribute to student success by determining the degree of alignment, clarity, rigor, and value as well as analyzing what content is addressed. The original intent of the evaluation was to have three separate rubrics, each with three categories that could be scored on a 1-3 scale. After further testing, it became apparent that some of the categories were redundant or did not provide valuable data, so the evaluation was refined to a single rubric with four categories. One of the original categories was flexibility. It was determined that this category did not bear valuable data, as it was inversely related to clarity. If a standard had high clarity, it had low flexibility based on the established qualifiers, and vise versa. This would skew the Q scores and negate the valuable information gleaned from the clarity scores. Vertical alignment proved to be a more appropriate evaluation tool, as it also replaced an entire rubric previously created to evaluate appropriateness. The third rubric pertained to value, which was consolidated into a single construct based on the 21st Century Skills by the Partnership for 21st Century Skills (2002).

Categories for Evaluation and Qualifiers

Alignment

The alignment category evaluates the vertical alignment of the standards, that is, how the standard connects or builds upon the knowledge and skills gained in the previous grade level. Standards are scored as: "Not covered in previous grade level," "Foundations laid in previous grade level, but different concept addressed (ex: repeated addition ➔multiplication)," or "Direct progression from previous grade level (same language, same concept addressed) (ex: 1 digit multiplication ➔ 2 digit multiplication)." The alignment analysis involved examining the previous year's standards and checking for a concept match. Although the State of Texas does

provide Texas Pre-Kindergarten Guidelines (2010), the Common Core does not provide any standards that can align to Kindergarten. Thus, vertical alignment was not analyzed for Kindergarten in CCSSELA or TEKS in order that the scores for CCSSELA and TEKS in Kindergarten could be compared.

Clarity

The clarity category evaluates how easy it is for teachers to know what the state's expectations are for students. If a standard is clear, it is unlikely that teachers will misinterpret it and teach the wrong concept – unintentionally affecting student learning. If the standard is too vague, teachers do not know what students are expected to learn. The qualifiers are: "Expectations unclear (teachers may have significantly different approaches due to vagueness of the standard leading to divergent learning outcomes)," "Expectations can be broadly interpreted (vagueness can potentially lead to misinterpretations or variations that affect the learning outcome)," and "Expectations are clear and specific (little room for misinterpretation)."

Rigor

The rigor category evaluates the difficulty level of the standard. This category is based on Bloom's Taxonomy of Learning Domains. A chart with definitions of each level of Bloom's Taxonomy was used to aid rating (Clemson University, n.d.). The six levels were paired in order to accommodate a three-point scale. The qualifiers are: knowledge or comprehension, application or analysis, and synthesis or evaluation. When scoring, raters must defer to the highest thinking level explicitly contained in the standard. Ex: "Identify and use words that name actions, directions, positions, sequences, and locations" (TEKS K.5A). This standard requires the

student to both "identify" and "use". While "identify" would qualify it as a knowledge level standard, "use" promotes this standard to the application level, since there is evidence of higher thought. However, raters must never extrapolate or assume a level that is not explicit. For example, "Ask and answer questions about information from a speaker, offering appropriate elaboration and detail" (CCSSELA SL.3.3.). This standard says, "ask and answer questions," but does not specify the difficulty level of the questions. Raters must classify this standard in the knowledge or comprehension level because no higher level of questioning is explicitly required.

Value

The value category is an adaptation of the 21st Century Skills by the Partnership for 21st Century Skills (2002). The intent of this category is to assess how useful the knowledge and skills contained in the standards are to students of the information age. Additionally, the goal is to determine whether the standards are preparing students for later grades, post-secondary education, and/or a career that requires the skills that have been determined essential for success in the 21st century by the Partnership for 21st Century Skills. The qualifiers are: the standard teaches a literacy skill, a learning skill, or a life skill. Literacy skills are ways of accessing, managing, and using information. Literacy skills include information literacy, media literacy, and technology literacy. Learning skills require thinking and creativity. Learning skills include: critical thinking, problem solving, creative thinking, collaborating, and communicating. Life skills are soft skills and any other general personal skills that an employer would look for. Life skills include: flexibility, initiative, social skills (understanding and working effectively with diverse groups, situational appropriateness, and language register), productivity (stamina, project management, study skills, following directions, and staying on task), leadership, self-directed

activities (improving focus, self-evaluation, and self-regulation), presenting and publishing, development of personal identity (introspection, writing one's name, forming opinions, and making connections to reality), and interpreting body language and hidden or biased messages.

Inter-Rater Reliability

Inter-rater reliability tests were run to ensure consistency between a group of raters scoring the same standards. A group of three professionals from the teaching field participated in the inter-rater reliability test: a classroom teacher, a professor from Texas A&M University's department of educational psychology, and a pre-service teacher (student teacher). All raters participated in a brief training before performing the evaluations independently. Raters were given a training manual to learn how to use the evaluation tools (Concept Matching Map and Quality Evaluation Rubric). The manual also provided insight indicating the purpose of the study and some background. Raters were shown sample standards that were rated and included rationales. The raters performed a practice evaluation and discussed their results as a group to gain clarification from the researcher. The raters had two practice samples and three actual samples to rate independently. Five samples were extracted from the Concept Matching Map and the Quality Evaluation Rubric of both TEKS and CCSS, grades K, 3, and 5. The raters had access to resources explaining the 21st century skills, their own rubric, and a flow chart intended to aid their evaluation process.

Intra-Rater Reliability

Using the same handbook as the inter-raters, the researcher performed a blind rescore of the standards previously rated one month prior to test intra-rater reliability, that is, the consistency of

scores given by a single rater various times. Intra-rater reliability tests were performed on both the Concept Matching Map and the Quality Evaluation Rubric.

CHAPTER III

RESULTS

Rater Reliability

It was important to first establish intra-rater reliability as the rubric was developed and with the final iteration of the rubric. Alderson, Clapham, & Wall (1995, p.129) state that:

> An examiner is judged to have intra-rater reliability if he or she gives the same set of scripts or oral performances the same marks on two different occasions. The examiner may still be considered reliable even if the marks are different; However, not much variation can be allowed before the reliability becomes questionable. Intra-rater reliability is usually measured by means of a correlation coefficient or through some form of analysis of variance.

According to David (2000, p. 256) when comparing how different raters score the analysis can be done in two ways by computing the correlation coefficient, or (b) by computing percent agreement. Both of these statistics have been presented in this paper. Intraclass Correlations are commonly used to establish inter-rater reliability (comparison among raters) (Landers, 2011). In order to maintain the consistency in the analysis, the same Intraclass Correlation analysis was used in this study to establish intra-rater reliability (comparison between two of the researcher's ratings one month apart). Figure 9 shows the results of both the inter- and intra-rater reliability tests.

Results of Rater Reliability Test					
TEKS/CC	Original Score	Intra	Inter 1 (ZU)	Inter 2 (KO)	Inter 3 (MW)
K.1G	3311	3311	3311	3311	2311
SL.K.1B	X212	X313	X212	X332	X322
3.27	3333	3333	3333	3332	3332
L.3.4A	3322	3322	3322	3322	3322
5.14C	2322	3323	3322	3332	3322
W.5.3C	3322	3322	3332	3333	3312
3.22A/L.3.1E	EM	EM	EM	EM	EM
5.24A/W.5.8	PM	PM	NO	PM	PM
K.18C/L.K.2D	NO	NO	NO	NO	NO

Figure 9. The figure shows the complete results of the inter-rater and intra-rater reliability test. The red rows represent TEKS standards that were assessed for quality, the blue are CCSSELA standards, and the white are matching and thus include both TEKS and CCSSELA (shown as TEKS/CC).

Table 1

Intra-rater Reliability Correlation Coefficients, Effect Sizes, and Percent Agreement

	Intraclass Correlation	Percent Agreement
Self-Rating (1 month apart)	.963, 95% CI[.911, .985]	92%

Note: The ICC statistic corresponds to reliability based on rating 23 randomly selected items comprised of standards in the ELA aspect of similar TEKS and CCS. The first rating of those items was done on 1/18/2015 and the second rating of those same items was done on 2/18/2015

Intra-rater reliability was tested during a two-hour session where raters received training on the evaluation process and independently rated selections from the standards.

Table 2

Inter-rater Reliability Statistics for 4 Individuals

	Intraclass Correlation	Percent Agreement
4 Raters (Professor, Teacher, 2 Student Teachers)	.935, 95% CI[.879, .969]	92%

Note: The ICC statistic corresponds to reliability based on rating 24 randomly selected items comprised of standards in the ELA aspect of similar TEKS and CCS. The four raters were a professor of education, a fourth-grade bilingual teacher, a student teacher, and the researcher (also a student teacher).

Table 3

Table for Correlation

Size of Correlation	Interpretation
Less than 0.20	Poor Agreement
0.20 to 0.40	Fair Agreement
0.40 to 0.60	Moderate Agreement
0.60 to 0.80	Good Agreement
0.80 to 1.00	Very Good Agreement

Note: (Altman, 1991, p. 404)

Table 3 indicates that both the intra-rater reliability and inter-rater reliability for the rubric created to compare the ELA TEKS and the CCSSELA is "very good agreement."

Concept Matching and Q Scores

The data summary is shown in Figure 10. In a separate table for each TEKS grade level and each CCSSELA grade level, it includes the number of instances where there is no match, an EM, a PM, the total number of standards rated, and the Q score. It also includes the average number of EM's, PM's, and "no matches" for all standards surveyed.

ADJUSTED DATA				
KINDERGARTEN DATA SUMMARY				
TEKS K			CCSSELA K	
NO MATCH	27		NO MATCH	24
EXACT MATCH	37		EXACT MATCH	33
PARTIAL MATCH	11		PARTIAL MATCH	9
Q SCORE	6.39		Q SCORE	6.26
STANDARDS RATED	75		STANDARDS RATED	66
3RD GRADE DATA SUMMARY				
TEKS 3			CCSSELA 3	
NO MATCH	55		NO MATCH	36
EXACT MATCH	37		EXACT MATCH	39
PARTIAL MATCH	11		PARTIAL MATCH	7
Q SCORE	9.62		Q SCORE	9.41
STANDARDS RATED	103		STANDARDS RATED	82
5TH GRADE DATA SUMMARY				
TEKS 5			CCSSELA 5	
NO MATCH	54		NO MATCH	31
EXACT MATCH	36		EXACT MATCH	36
PARTIAL MATCH	6		PARTIAL MATCH	8
Q SCORE	9.81		Q SCORE	9.45
STANDARDS RATED	96		STANDARDS RATED	75
AVERAGES				
NO MATCH	37.83			
EXACT MATCH	36.33			
PARTIAL MATCH	8.67			
EM + PM	45.00			
STANDARDS RATED	82.83			

Figure 10. The figure shows the adjusted data, including averages, for content matching and Q Score.

It was observed that sometimes, several partial matches added up to an exact match. Since all concepts were addressed in this situation, although broken up into several standards, these partial matches are considered to constitute an exact match in the data summary (see example in Figure 11). It was also observed that sometimes, although not all concepts were addressed for one standard, for its match, they were. The standard in which all concepts are addressed and has no unique concepts is considered an exact match for the data summary (see example in Figure 12). The raw data was adjusted to reflect these changes in Figure 10.

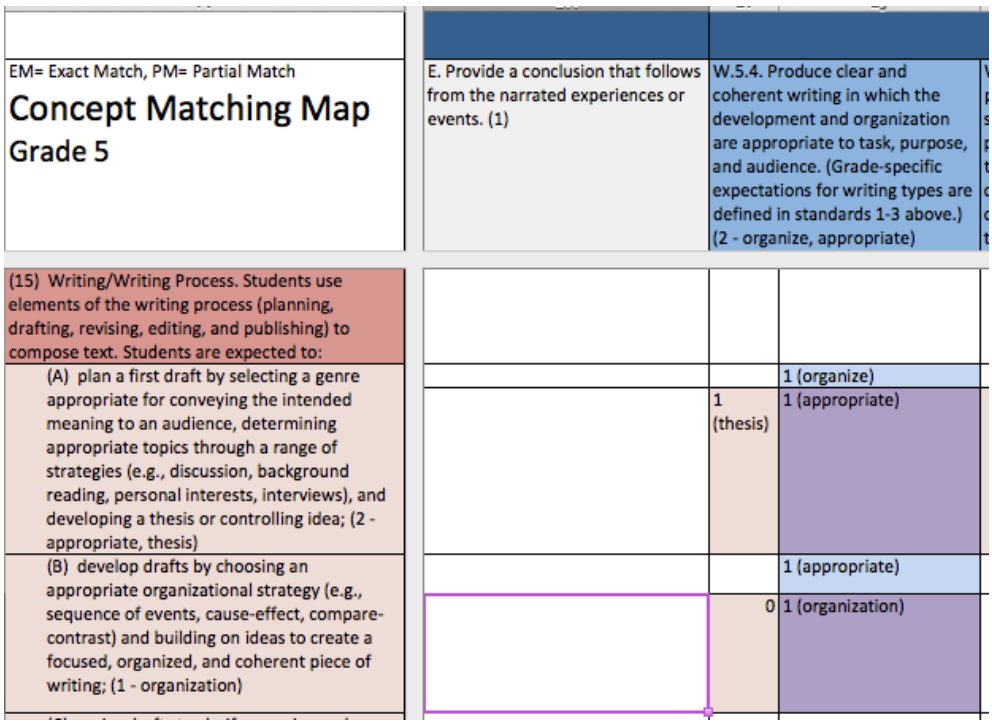

Figure 11. The figure shows an example in which both concepts in W.5.4. are addressed, although in two separate TEKS standards. W.5.4. counts as having an exact match in the data summary because all of its concepts are addressed in the TEKS.

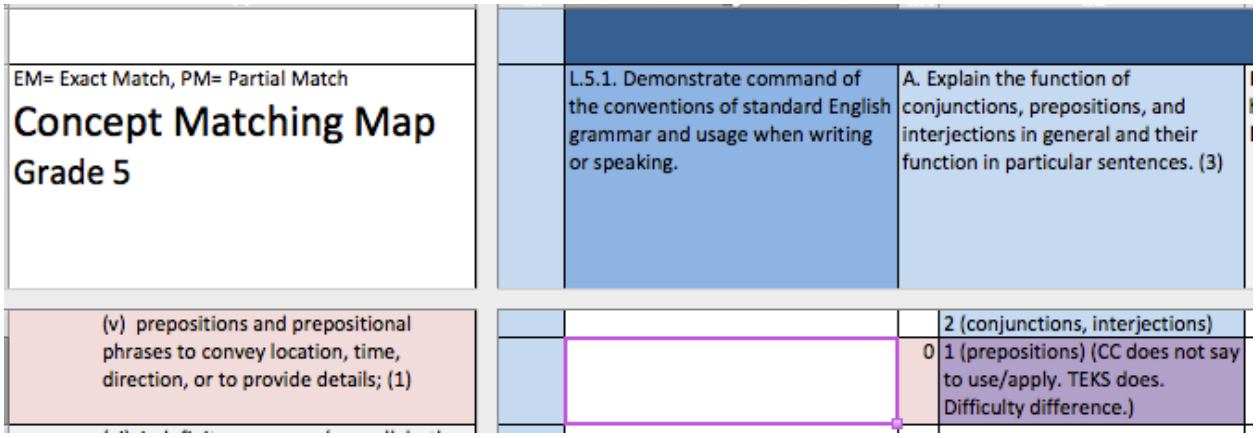

Figure 12. The figure shows an example in which the CCSSELA address all of the TEKS concepts. Since all concepts in this TEKS standard have been addressed by CCSSELA, TEKS 5.20Av is an exact match in the adjusted data summary.

Kindergarten, TEKS

Out of 75 standards rated, about half (49.33%) of the standards had exact matches with a counterpart in the Common Core. 14.67% were partial matches and about a third (36.00%) were unique to the TEKS (no match). TEKS exceeded the Common Core in quality by 0.13 points.

Kindergarten, CCSSELA

Out of 66 standards rated, exactly half (50%) of the standards had exact matches with a counterpart in the TEKS. 13.64% were partial matches and about a third (36.36%) were unique to the Common Core (no match). Common Core fell short of the TEKS in quality by 0.13 points.

3rd Grade, TEKS

Out of 103 standards rated, about a third (36.92%) of the standards had exact matches with a counterpart in the Common Core. 10.68% were partial matches and about half (53.40%) were unique to the TEKS (no match). TEKS exceeded the Common Core in quality by 0.21 points.

3rd Grade, CCSSELA

Out of 82 standards rated, about half (47.56%) of the standards had exact matches with a counterpart in the TEKS. 8.54% were partial matches and not quite half (43.90%) were unique to the Common Core (no match). Common Core fell short of the TEKS in quality by 0.21 points.

5th Grade, TEKS

Out of 96 standards rated, about a third (37.5%) of the standards had exact matches with a counterpart in the Common Core. 6.25% were partial matches and about half (56.25%) were unique to the TEKS (no match). TEKS exceeded the Common Core in quality by 0.34 points.

5th Grade, CCSSELA

Out of 75 standards rated, about half (48.00%) of the standards had exact matches with a counterpart in the TEKS. 10.67% were partial matches and not quite half (41.33%) were unique to the Common Core (no match). Common Core fell short of the TEKS in quality by 0.34 points.

Summary

The data shows that the TEKS and Common Core are significantly different, with only an average of 36 exact matches for an average of 83 total standards across all grade levels. The standards sets have less than 50% concept overlap. If the average number of partial matches and exact matches are combined, 45 out of 83 standards (54.33%) share at least one concept. That means that on average, 38 out of 83 standards (45.67%) are requiring completely different concepts to be taught that are not being addressed in both standards sets. In fewer words, approximately half of the concepts taught in Texas schools will not be taught in Common Core states, and vice versa.

Quality Evaluation Breakdown

Figure 13 shows the breakdown of Q Scores for each grade level.

	Quality				
	Alignment	Clarity	Rigor	Value	Q Score
TEKS - K		2.97	1.80	1.61	6.39
CCSSELA - K		2.91	1.61	1.74	6.26
DIFFERENCE		0.06	0.19	-0.13	0.13
TEKS - 3	2.60	2.93	2.19	1.89	9.62
CCSSELA - 3	2.61	2.96	2.04	1.80	9.41
DIFFERENCE	-0.01	-0.03	0.15	0.09	0.21
TEKS - 5	2.59	2.97	2.28	1.95	9.79
CCSSELA - 5	2.65	2.91	2.07	1.83	9.45
DIFFERENCE	-0.06	0.06	0.21	0.12	0.34

Figure 13. The figure shows a breakdown of the Q Scores by category, standards set (TEKS or CCSSELA), and grade level. Red boxes represent when the Common Core outscored TEKS.

Kindergarten

The TEKS exceeded CCSSELA by 0.06 points in clarity and 0.19 points in rigor but fell short 0.13 points in value in Kindergarten. Both the TEKS' and CCSSELA's highest scores were in clarity by more than a full point.

3rd Grade

The Common Core exceeded the TEKS in alignment by a mere 0.01 point and in clarity by only 0.03 points. The TEKS were more rigorous by 0.15 points and also required more valuable content by 0.09 points. Both the TEKS' and CCSSELA's highest scores were in clarity by about 0.3 points.

5th Grade

The Common Core exceeded TEKS by another small margin in alignment – only 0.06 points. TEKS were superior in clarity, also by a minute margin of 0.06 points. However, the TEKS

were significantly more rigorous by 0.21 points and 0.12 points more valuable. Both the TEKS' and CCSSELA's highest scores were again in clarity by approximately 0.3 points.

CHAPTER IV

CONCLUSIONS

Analysis of Concept Matching Results

The goal of concept matching was to find out if the TEKS and Common Core are significantly different, and the data offers a resounding yes. The TEKS and Common Core are significantly different in every grade level, never sharing more than 50% exact concept matches. These numbers indicate that students in Texas will have a vastly different learning experience in ELA content than students in other states. As college entrance exams are conformed to the Common Core, the data certainly validates the concern that Texan students could be at a disadvantage. A possible reason for the enormous discrepancy in content overlap is that concepts may be introduced at different grade levels because the TEKS and Common Core are not aligned with each other. For example, reading biographies is a TEKS concept that was not found in CCSSELA. Perhaps Common Core addresses biographies in 4th grade, a grade that was not surveyed. This possibility is not supported by the data collected and would require further investigation. Even so, the data stands to show that 5th graders in Texas are learning markedly different content than 5th graders in Common Core states. The degree of alignment between Common Core and TEKS also brings into question the developmental appropriateness of standards depending on the grade level in which concepts are introduced.

Unique Elements and Characteristics of the TEKS

The main areas of unique concepts in the TEKS are: developing and following a research plan, reading and writing procedural texts, giving and following directions, planning and

brainstorming as part of the writing process, comparing fables/myths/traditional folktales, media literacy (interpreting media messages and analyzing how certain techniques impact meaning), writing poems, and making predictions. A Kindergarten standard that is unique to the TEKS is "write one's own name." (K.18C). Writing one's name is a skill that must be explicitly taught and practiced, and is a huge focus in Kindergarten in Texas. It is likely that teachers in Common Core states still spend instructional time on writing one's name, but it is significant to note that name writing was not important enough in the eyes of the Common Core drafters to merit its own standard, and if it is not in the standards, it would not make sense for it to be part of any assessments or evaluations of Kindergarten progress.

Specific conventions (especially in grammar and spelling) are often omitted in the Common Core, making them unique to TEKS, such as "drop the y, add -ies" to form a plural for nouns ending in y. Using common syllabication patterns as a decoding technique is exclusive to TEKS as well. TEKS gives specific word structures (open syllable words and r-controlled vowels) that students must be able to decode. These specific expectations make the TEKS easy to assess and deliver, because teachers know exactly what is expected of students. They also ensure that students will have a well-developed command of the conventions of English.

Point of view of a narrator (first-person, third-person, etc.) is uniquely included in TEKS standards. Biographies and autobiographies, sensory language and imagery, interpreting and writing persuasive texts, writing a topic sentence, writing letters, writing responses to text, writing in cursive, specific capitalization rules, and spelling conventions are all unique to the TEKS. These elements are essential in becoming a well-rounded person and have high content

value. Although the value of cursive is disputed, both persuasive texts and writing a topic sentence are invaluable foundations for critical thinking and the organizational skills needed to write a coherent composition. These unique TEKS standards are not a sideshow. They are absolutely essential skills for 21st century learners, such as this standard: "write letters whose language is tailored to the audience and purpose (e.g., a thank you note to a friend) and that use appropriate conventions (e.g., date, salutation, closing);" (TEKS 3.20B). TEKS Standard 3.20B teaches 3rd graders to communicate in a formal way, taking care to address the recipient appropriately and write with purpose. This standard could be used to write an e-mail – a task almost every professional must face dozens of times each day. In Texas's Bilingual Target Language Proficiency Test (BTLPT), a certification exam for bilingual teachers, one section requires candidates to compose an e-mail given a situation, addressing the recipient appropriately (be it the school principal, a parent, or a colleague) and addressing the purpose completely and clearly. People of the information age will be expected to know how to communicate effectively, a skill that is threatened by shorthand texting and limited recreational reading that has been replaced by movies and video games. The TEKS standard for 3rd graders about writing letters is absolutely an appropriate and valuable preparation for students who hope to have a job, own a business, or communicate with others.

Unique Elements and Characteristics of the CCSSELA

The unique areas that characterize the Common Core are: comparing and contrasting similar elements (stories in same genre, varieties of English, characters, etc.), supporting ideas with evidence or linking reasons to a point, the author and illustrator's relationship with the story, and visual elements (adding illustrations, adding multimedia presentations, relating pictures to the

text they go with). These concepts permeate all three grade levels. Quoting and analyzing differences between formal and informal or spoken and written English are also characteristic of the Common Core. Common Core includes writing opinion pieces, which is its substitute for persuasive writing. Opinion pieces and persuasive writing were determined to be different because stating the opinion, "I like dogs," is not the same as trying to convince someone that dogs are the best pet. The Common Core has several productivity standards that are intended to increase student stamina and study skills, such as "Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences." (CCSSELA W.3.10.) and also, "Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion." (CCSSELA SL.3.1.A.). There are some Common Core exclusive grammatical standards: perfect verb tenses, recognizing and correcting inappropriate shifts in verb tense, and certain comma rules. Common Core also specifically addresses modifying sentences for meaning and style, analyzing shades of meaning (tip-toe, walk, scamper, and run), real-life connections between words and their meanings, using root words to determine meaning (company/companion), writing dialogue, summarizing information presented in diverse media, and linking words (because, therefore, for example, since). The lower rigor can be attributed to the standards regarding quoting, summarizing, and a focus on the author and illustrator's relationship with the text. Quoting and summarizing do not give students the same opportunities to evaluate or come up with their own ideas. Lower rigor can be seen in CCSSELA standard RL.K.6., which states: "With prompting and support, name the author and illustrator of a story and define the role of each in telling the story." The standard sounds advanced, as if the student is interpreting a hidden

responsibility of authors and illustrators. Upon further inspection, one can see that it simply requires students to know that the author writes the story and the illustrator draws the pictures. CCSSELA standards RL.K.7. and RI.K.7. play the same trick: "With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts)." "With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts)." They feign higher rigor by using the word "relationship," when really, the student must only identify what the illustration depicts. Perhaps standard RL.K.6. refers to the author as an individual and his relationship with the story, in which case the standard is actually quite unclear. However, as biographies are not explored in the CCSSELA, it is unlikely that a class would take instructional time to read a biography about that author in order to analyze how his personal experience connects him to his composition.

Analysis of Quality Evaluation Results

The TEKS consistently outscored the Common Core across all grade levels, which demonstrates the significance of the data. These standards were drafted by educational professionals, so it was anticipated that the difference in quality would not be extreme, but the consistency shows that the TEKS had strengths that were themes throughout the standards, helping TEKS outscore Common Core.

Rigor

It is in the category of rigor that TEKS made significant gains over the Common Core. The most extreme disparity occurred in 5th grade, where the standards differed in rigor by 0.21 points.

There were several advantages across all grade levels surveyed that put the TEKS ahead. A large portion of the TEKS standards require students to "make inferences and draw conclusions." This is a high level of thinking because it involves evaluation and synthesis. According to the Bloom's Taxonomy Action Verbs (Clemson, n.d.) chart used to score rigor, evaluation is to "make and defend judgments based on internal evidence or external criteria." Making inferences and drawing conclusions require students to form ideas based on information, which granted the TEKS a 3 on standards that include making inferences and drawing conclusions. The TEKS also had several standards that elicit self-evaluation, such as K.1E: "Monitor accuracy in decoding." Self-evaluation demands higher level thinking skills that score a 3 on the Q scale. The TEKS' expansive section of writing standards also boosted its rigor score, as writing is synthesizing your thoughts and ideas. The TEKS had many specific requirements for writing, even including different types of compositions like letters and reading responses. The research standards included in the TEKS produced several perfect 12s on the Q score. The section about research standards is robust and specific, requiring students to draw conclusions and even write an informal thesis statement, as required in TEKS 5.26B: "[the student] develops a topic sentence, summarizes findings, and uses evidence to support conclusions." The final stride that gave TEKS a leg up is the frequent requirement to make predictions based on information read or discussed. Making predictions is a theme in TEKS that is completely absent in the Common Core. It requires students to synthesize; students must come up with a potential outcome based on what they have read or discussed.

In 3rd and 5th grades, the Common Core had mostly 2's for rigor (standards that demand application or analysis level thinking). It had few 1's and few 3's. Its 3's came primarily from the writing standards, which require students to synthesize ideas and create their own original works. The 1's came from standards requiring students to "ask and answer questions." Since the difficulty level of the question being asked is not stated, it cannot be assumed. It follows that these standards were rated as if the students are being asked level 1 questions at the knowledge and comprehension level because nothing more advanced is specified. In Kindergarten, Common Core still had primarily 2's and few 3's, but more 1's were present because of developmentally appropriate standards about concepts of print skills such as holding a book that merit knowledge and comprehension rigor levels.

Clarity

Clarity received the highest scores in both TEKS and CCSSELA, closely followed by alignment. The two standards sets differed so slightly (differentials of 0.06, 0.03, and 0.06) in clarity that the difference is not significant. In both CCSSELA and TEKS, standards were highly clear, receiving mostly 3's. The data obtained from this measurement is not exceptionally useful in highlighting similarities and differences in the CCSSELA and TEKS, nor is it an exceptional indicator of quality, since almost every standard scored a 3 in this category. This could have been improved by indicating more specific ramifications for clarity in the rubric. It was also most difficult to achieve rater-reliability in the category of clarity. Although the rubric was refined, perhaps it was not enough. The only standard that received a 1 was: "Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently." (CCSSELA RI.5.7.). This standard is

too vague. A teacher cannot easily know if the learning objective has been achieved because expectations are non-specific (the words "quickly" and "efficiently" cannot be easily quantified).

The TEKS are also often quite verbose. Although the standards are clear in that it is evident what concept should be taught, the TEKS say it in more words than necessary. For student learning, this is not such a big deal, but for teachers, the language in TEKS standards could be made more concise to facilitate efficient and effective instructional planning.

Alignment

The Common Core was anticipated to have a superior alignment score because of its neat numbering system, but surprisingly, the scores were almost identical (differentials of 0.01 and 0.06). Standards are vertically aligned if concepts are taught in a logical order, each grade level providing a foundation for the concepts taught in the next, leaving no learning gaps. Although the TEKS standards are not numbered consistently, the standards still showed a remarkably high level of alignment in that all standards do follow a logical progression and do not leave significant learning gaps. The standards are cohesive and will afford students with excellent learning opportunities. Based on the data, the TEKS are very appropriate for student learning, but could be improved to facilitate efficient instructional planning for teachers. The numbering system could be streamlined so that alignment is easier to recognize for teachers. Re-numbering would also facilitate collaboration between grade levels when teachers plan or when assessing students' prior knowledge. When a 4th grade teacher in Texas wants to see what foundations were laid in 3rd grade to gain an understanding of what prior knowledge his or her class might have, the teacher has to do a bit of digging to find the 3rd grade standard that aligns, although

after searching, they are sure to find it. Standards across grade levels are named with the same category titles, which helps find the right number, but the Common Core has an excellent system where each standard always has the same code. “RL.3.1.” means Reading Standards for Literature, 3rd grade, standard 1. The 2nd grade aligned standard is “RL.2.1.” This system makes is easy for teachers to collaborate across grade levels and refer to standards from previous or future grade levels. Despite their excellent numbering system, Common Core fell short of a perfect 3 because although the categorical standards are perfectly aligned, some concepts got lost among the SE’s.

Value

The TEKS and Common Core were very close in value, almost tying in 3rd grade, TEKS taking the win by 0.12 points in 5th, and Common Core winning Kindergarten by 0.13 points. TEKS drew many of its value points from standards that required self-evaluation, determining appropriate audiences, and following a research plan. Common Core drew its value points from a wide variety of standards. Several involved stamina while performing tasks, such as: “Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences,” (CCSSELA W.5.10.) and “With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.” (CCSSELA W.5.6.). Others included appropriateness to task and purpose or language register, and coming to class prepared.

For the TEKS, grade level was directly proportional to value; as the grade level increased, the TEKS increased in value. The CCSSELA also increased in value with grade levels, but at a smaller interval, allowing TEKS to surpass CCSSELA after Kindergarten. Based on observations of the standards, this is likely attributed to the custom in Texas ELA education to "learn to read" from Kindergarten until 2nd grade and then make the transition to "read to learn" in 3rd grade and on. Kindergarten, 1st, and 2nd grade standards in Texas for ELA will primarily focus on literacy skills – a value rating of 1. After 2nd grade, students are expected to "read to learn," that is, read in order to comprehend content and apply it. Students are then able to read more diverse texts including biographies, poems, and dramas and respond with critical thinking. These new opportunities allow students to learn content at a higher value of 2 or 3.

Suggestions for Further Research

Studies investigating the alignment between the TEKS and Common Core would provide a more complete analysis of which concepts are truly matched, as well as a complete comparison and evaluation of all grades, not just the sample of K, 3, and 5. Texas adopted new math standards (an updated version of the TEKS) and implemented them in the 2014-2015 school year. A comparison and evaluation of the new TEKS and Common Core Mathematics standards would provide insight into the technical side of American students' preparation for post-secondary life, notable especially because of the Common Core's claim to be preparing students to be successful in technical fields. An entirely separate dimension to the CCSSELA standards is standard 10, which was not evaluated in this study. Standard 10 is Reading Range, Quality, and Complexity and includes a reading list. It would be telling to look at what books they selected and search for

trends in their selections. Lastly, other states should perform similar comparisons between the Common Core and their own standards.

Final Implications

Differences Between TEKS and CCSSELA

The Common Core and TEKS are highly dissimilar, sharing only about 50% of their content. The Common Core State Standards for English Language Arts are not an improvement upon the TEKS. They are a close second, at best. The disparity between the two comes down to the most essential category: rigor. The Common Core is significantly less rigorous than Texas's standards.

Weaknesses of the Common Core

The Common Core Standards are not of poor, but average quality. A score of 10 or higher is a high quality standard, and the CCSSELA managed a 9.45 at its highest. For an initiative that touts college and career readiness and preparedness for 21st Century learners, although it did not fail completely, it underperformed. The Common Core has remarkably few standards that require students to interact with diverse groups, write letters, or collaborate – essential skills in college and professional realms. Its small and informal emphasis on research certainly leaves a lot to be desired. The absence of standards that require students to make predictions and compose and understand persuasive texts will leave students lacking in critical thinking skills needed to negotiate a raise, plan for the future, and confidently interpret propaganda in the media. The official Common Core website states on its Frequently Asked Questions page: "No state was asked to lower their expectations for students in adopting the Common Core."

However, this analysis demonstrates that Texas would in fact be lowering its standards by accepting the Common Core State Standards.

Strengths of the TEKS

The TEKS reached its highest Q score of 9.79 in 5th grade. Texas's standards are very close to being high quality standards, but they could be revised to facilitate teachers' use of the standards, especially in the areas of alignment and clarity, by streamlining the numbering system and using precise language to cut down text. The TEKS contain an excellent spread of content that will prepare learners for diverse careers and vocations. Certainly the research standards will help develop some of Texas's best scientists and thinkers. Texas's standards require students to make predictions, collaborate, follow rules, persuade, and analyze techniques the media uses to convey messages. The specific conventions of grammar, spelling, and decoding will bolster students' command of literacy skills in early grades so that they can transition to "reading to learn," confidently comprehending material and developing their own predictions and ideas about what they read. The rigorous and diverse standards that Texan students are held to will prepare learners to be successful in post-secondary school and to collaborate with diverse host of people who populate the state.

Implications for States

Based on the findings of this study, Common Core states are encouraged to reevaluate their newly adopted standards with a wary eye, comparing them with their own former standards and pushing for repeal or reform after determining what is best for their state.

Non-Common Core states including Texas, Virginia, Oklahoma, Indiana, Alaska, and Nebraska are encouraged to resist pressure to adopt the Common Core and collaborate with each other to continue to improve their educational systems and prepare students to remain competitive in Common-Core-biased college entrance exams while maintaining autonomy.

The TEKS are still the best bet for learners in Texas. Texas should continue to scrutinize and improve its own standards rather than abandon them for a less rigorous alternative. In short, a bit of federal funding is not worth watering down the rigorous standard of education that Texas holds.

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